

**Summary Minutes of the Joint Meeting of the U.S. Environmental Protection Agency  
Science Advisory Board (SAB)  
and Board of Scientific Counselors (BOSC)  
September 19, 2011**

**Teleconference of the Chartered SAB<sup>1</sup> and BOSC<sup>2</sup>**

**Date and Time:** September 19, 2011, 12:00 a.m. – 3:00 p.m. Eastern Time

**Location:** By Teleconference

**Purpose:** discuss a draft SAB/BOSC report commenting on the Office of Research and Development's (ORD's) new strategic directions for research."<sup>3</sup>

**SAB Members and Liaison Participants:**

SAB Members

Dr. Deborah Swackhamer, Chair  
Dr. David Allen  
Dr. Claudia Benitez-Nelson  
Dr. Ingrid Burke  
Dr. Thomas Burke  
Dr. Terry Daniel  
Dr. George Daston  
Dr. Costel Denson  
Dr. Otto Doering  
Dr. David Dzombak  
Dr. John Giesy  
Dr. Bernd Kahn  
Dr. Madhu Khanna

Dr. Cecil Lue-Hing  
Dr. L.D. McMullen  
Dr. James Mihelcic  
Dr. Christine Moe  
Dr. Eileen Murphy  
Dr. Duncan Patten  
Dr. Stephen Roberts  
Dr. Amanda Rodewald  
Dr. Jerald Schnoor  
Dr. John Vena  
Dr. Thomas Zoeller  
Dr. Thomas Wallsten

Members of the BOSC

Dr. Martin Philbert, Chair  
Dr. Kenneth Olden, Vice Chair  
Dr. Edward Carney  
Dr. Susan Cozzens  
Dr. Lisa Dilling  
Dr. Earthea Nance  
Dr. Barry Ryan  
Dr. Rosemarie Szostak  
Dr. John Tharakan  
Dr. Russell Thomas  
Dr. Katherine von Stackelberg  
Ms. Marie Zhuikov

**Liaison to the SAB:**

Dr. James Johnson

**DFOs:**

Dr. Angela Nugent, SAB Staff Office, Designated Federal Officer for the Chartered SAB  
Mr. Greg Susanke, ORD, Designated Federal Officer for the BOSC

**Teleconference Summary:**

The teleconference was announced in the Federal Register<sup>4</sup> and discussion generally followed the issues and timing as presented in the agenda.<sup>5</sup>

**Convene the meeting**

Dr. Nugent and Mr. Susanke formally opened the meeting and noted that this teleconference of the SAB and BOSC had been announced in the Federal Register. They briefly described the mission of the two advisory committees and the authorities under which the committees operate. The SAB an independent, expert federal advisory committee chartered under the authority of the Federal Advisory Committee Act (FACA). The SAB is empowered by law, Environmental Research, Development, and Demonstration Authorization Act (ERDDAA), to provide advice to the EPA Administrator on scientific and technical issues that support EPA's decisions. The BOSC was established and operates at the request of the Office of Research and Development under authority of the Federal Advisory Committee Act. It provides advice and recommendations on both the technical and management aspects of ORD and its research programs.

The DFOs noted that the Federal Register notice meeting announcement had provided the public with an opportunity to provide written and oral comment. There was no request for oral comment and no written public comment.

**Purpose of meeting and review of the agenda**

Dr. Deborah Swackhamer, the SAB Chair, welcomed SAB and BOSC members, thanked them, and reviewed the purpose of the meeting. She asked members to deliberate to make the report on ORD strategic research directions the best it could be.

**Discussion of the draft report**

Participants provided initial comments that confirmed that the report captured the major themes from the June 2011 SAB-BOSC meeting on ORD's new strategic research directions. Participants on the Safe and Sustainable Water Resources and Air, Climate and Energy breakout groups confirmed that the report overall "captured the gist" of the discussions on their topics.

Participants generally agreed that section one of the report should be restructured to address the charge questions more directly. The section on innovation, for example, could be strengthened, for example, and only unique points related to individual research programs retained in section two of the report.

The group discussed the need to explain in the letter and introduction why the SAB and the BOSC recommend that ORD's research be described as six programs, rather than "4+2." The group agreed to provide this additional discussion and also to provide separate sections of the report addressing the Chemical Safety for Sustainability Program and Human Health Risk Assessment program.

A participant noted that the report communicates that the SAB and the BOSC were not confident about sustainability as a way to integrate across ORD's six main programs. He asked whether participants should discuss this issue on the teleconference. Another member asked how the SAB-BOSC report interfaced with the National Research Council's (NRC) recent sustainability report. The SAB Chair responded that the NRC report, *Sustainability and the U.S. EPA*, addressed the broad topic of how to operationalize sustainability at EPA and did not focus on ORD. The member suggested that an SAB or BOSC member review the NRC report in detail and ensure there were no major inadvertent differences. An SAB liaison member committed to providing the SAB DFO with briefing materials received at the release of the NRC report so that these materials could be provided to the SAB and BOSC members.

Participants agreed that the report should be consistent and continual in recommending ORD integrate research across all its programs. All six programs should be described as "cross-cutting, integrated programs." A member noted that the report should recommend that EPA integrate between the Safe and Sustainable Water Research program and Safe and Healthy Communities program and between Homeland Security and Safe and Healthy Communities.

SAB and BOSC members discussed the special role of the Safe and Healthy Communities program related to ORD integration. Members discussed the relative merits of three graphic representations provided by ORD showing the relationships among research programs. Figure 2 in the draft SAB-BOSC report was taken from the draft Framework of the Safe and Sustainable Water Resources program. It presented the Safe and Healthy Communities program as the "background" for other ORD programs with "communication and integration with more directed programs." Members agreed that the SAB-BOSC report should convey that this figure was the most successful in conveying the importance of communication and integration among SAB programs, given all the graphics ORD presented.

The discussion then turned to discussion of individual research programs. Members noted that the discussion of the Air, Climate and Energy program could be strengthened by adding that the SAB and BOSC envisioned integration across chemicals not just in air, but across all media. One member noted that the report should cite the SAB's recent report *Reactive Nitrogen in the United States: An Analysis of Inputs, Flows, Consequences, and Management Options* to support this point. Another member noted that the discussion might also include mention of the importance of research related to pollution prevention and reducing emissions at the source.

In the report's section on Homeland Security, participants agreed that ORD consider broadening research to seek applications to both natural and anthropogenic disasters and not just terrorism-related threats. Participants agreed that the report should encourage ORD to consider reframing the title of this program to include disasters not related to terrorist events. The report should also recommend that ORD seek opportunities for "dual use" science, where science product developed to respond to terrorist threats have broader application, such as the CANARY early detection system for drinking water contamination, developed collaboratively as part of the homeland security initiatives program.

The group discussed the draft text relating to the Safe and Sustainable Water Resources program. They discussed strengthening language on page 16 to recommend that ORD take a leadership role to create new types of collaborations with other federal agencies, especially the U.S. Department of Agriculture. One member suggested that the text on innovations in the water section was vague. The SAB Chair asked this member, Dr. Christine Moe, to provide written comments. One SAB member requested that Dr. Moe review EPA's draft Safe and Sustainable Water Resources framework document, so that she would be aware of the considerable initiatives already included in that document reviewed by the SAB and BOSC in June 2011.

Draft report text related to ORD's Safe and Healthy Communities program was the next topic to be addressed. The SAB Chair noted that this research area was one where ORD was especially interested in SAB-BOSC advice. An ecologist on the Board noted that the draft report calls strongly and appropriately for ORD support for ecosystem science. He also noted that the section should recommend ORD coordination across research programs. Another member asked that the report strengthen the language on page 23 providing a caveat regarding the ORD goal to provide decision support tools to empower communities. She noted that often local communities make decisions on shorter temporal scales and smaller spatial scales than EPA and community decisions may not resolve in results EPA desires or expects. She suggested adding language encouraging ORD to think through these issues and identify also whether communities may need certain kinds of education or information to use decision support tools ORD provides. Other members suggested that the report recommend that EPA define the "communities" and "decision makers" they envision, as well as the institutional structure for interaction for community users. The Sustainable and Healthy Community program must be sensitive to EPA's role is at different levels. The report should also state that the report will help make ORD more responsive to regions. Regions can help build support for this program and also help ORD with implementation.

An SAB member suggested that the report text be revised to keep ORD focused on ecosystem services, not ecosystem science for its own sake. He suggested that the conclusion of recommendations related to Sustainable and Health Committees emphasize this point. Other members supported this view, noting that a systems approach requires examination of coupled interactions of social, economic and ecological systems. They noted that the report should make reference to National Science Foundation (NSF) programs linking natural and human systems, including the NSF Sustainability Research Networks Competition and the NSF program on Dynamics of Coupled Natural and Human Systems (CNH).

SAB and BOSC members turned to discussion of the draft report text commenting on both the Chemical Safety for Sustainability and Human Health Risk Assessment programs. The SAB Chair suggested that the SAB-BOSC report be revised to provide separate sections for each research program to emphasize the separate importance of these different activities and to highlight the significance of green chemistry and computational toxicology. Members spoke of the need to revise text on page 27 regarding social, behavioral and decision science needs, which mistakenly appears under the heading “ORD internal coordination.” The text should be revised to state more clearly these social behavioral and decision science research needs, along with other high priority needs, including increasing the number of IRIS values. Participants discussed the nature of social, behavioral and decision science needs in the IRIS program. They spoke about the need to identify the audience for IRIS, the need for the IRIS program to explain more clearly its purpose and what it does, and how to communicate risk-related information to people who do not understand risk well. Members spoke about the need for transparency and consistency across IRIS documents.

Another member noted the importance of separating discussion of the Chemical Safety for Sustainability research from Human Health Risk Assessment, because some human health risk assessments involve biological hazards, not chemical hazards.

SAB and BOSC members then discussed how to address the broader issue of social, behavioral and decision sciences in the report. A member suggested that the draft text on page 24 relating to the roles of social, behavioral, and decision sciences should be moved to the section devoted to those sciences. Participants agreed that the discussion of social, behavioral and decision sciences on page 10 (section 1) should be strengthened, that only program-specific recommendations related to those science be included in program write-ups in section 2, and that the implementation recommendations in section 3 be moved to an appendix. One member cautioned that it might not be wise to highlight social, behavioral, and decision sciences at the beginning of the report for attention because there are other areas where EPA does not have core expertise (e.g., epidemiology), where it leverages other agencies. Other members took a different position and said that such recommendations for developing social, behavioral and decision science expertise was consistent with past SAB, BOSC, and NACEPT advice and was consistent with the recent NRC sustainability report.

Participants briefly discussed ways to strengthen the text in the new appendix. One member suggested adding additional bullets to the bottom of page 30 to identify ways social, behavioral and decision science expertise could be used to improve the way ORD decides, plans, and implements its own activities. Additional bullets should be added regarding how these disciplines might be used to promote adoption of innovative environmental management approaches outside EPA.

The group also discussed changes to Table 1 in the draft report, which provides an “Initial list of relevant social, behavioral and decision science disciplines and sub disciplines.” One member noted that the list should focus on disciplines that ORD does not currently cover and therefore should remove entries for communication and education. Another member emphasized that the

focus should be on interdisciplinary approaches. A third member suggested adding philosophy (to cover environmental ethics) and including environmental justice under sociology. An SAB member noted that the list was adapted from the report from an ORD Behavioral/Social Sciences Town Hall Meeting held in June 2011 and the SAB and BOSC agreed that the report should reference this activity. The SAB Chairs suggested that the Appendix materials be presented only as an initial list and that the SAB and BOSC are available to provide additional advice to ORD regarding social, behavioral and decision sciences in ORD's programs.

SAB and BOSC members then discussed the overall structure of the report. One member suggested that Section 1 should be strengthened to provide major recommendations regarding social science, human resources, regional needs, and importance of avoiding stovepipes. Another member suggested that the report recommend ORD to identify for each program areas the key expertises related to these areas that they would develop anew, maintain, or access from another source. The report should emphasize that identification of these core expertises is essential to allow ORD to address future environmental problems.

Board members also discussed adding language to the discussion of ORD's innovation efforts to call for an evaluation of the program that would identify the value added. Members did not wish to disparage the excellent efforts of ORD's current innovation officer or to discourage ORD from exploring ways to use personnel or some kind of system to stimulate innovative research that is useful for EPA.

The SAB Chair noted that the report requires editing to ensure that it is easier to read and has a single voice. She proposed to work with the BOSC Chair and the DFOs to revise the report and provide it to SAB and BOSC members for their review. Participants agreed to such an email-based review of a revised draft report, edited to reflect the teleconference discussions.

The Designated Federal Officer adjourned the meeting at 2:30 p.m.

Respectfully Submitted:

Certified as True:

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Dr. Angela Nugent  
SAB DFO

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Dr. Deborah Swackhamer  
SAB Chair

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Mr. Greg Susanke  
BOSC DFO

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Dr. Martin Philbert  
BOSC Chair

NOTE AND DISCLAIMER: The minutes of this public meeting reflect diverse ideas and suggestions offered by committee members during the course of deliberations within the

meeting. Such ideas, suggestions, and deliberations do not necessarily reflect definitive consensus advice from the panel members. The reader is cautioned to not rely on the minutes represent final, approved, consensus advice and recommendations offered to the Agency. Such advice and recommendations may be found in the final advisories, commentaries, letters, or reports prepared and transmitted to the EPA Administrator following the public meetings.

**Attachment A**  
**Members of the Agency and the Public Requesting Teleconference Access**

Al Edwards, EPA

Perry Cohn,  
New Jersey Dept of Health and Senior Services

Mimi Dannel, EPA

Susan Euling, EPA

Fred Hauchman, EPA

Jonathan G. Herrmann, EPA

Jenny Hopkinson, Inside EPA

Chuck Noss, EPA

Gail Robarge, EPA

Will Ollison, API

Michael Tsang, EPA,

### Materials Cited

The following meeting materials are available on the SAB website,  
<http://www.epa.gov/sab>, at the following address:  
<http://yosemite.epa.gov/sab/sabproduct.nsf/a84bfee16cc358ad85256ccd006b0b4b/ad635e9fc2124af852578db004b03ac!OpenDocument&Date=2011-09-19>

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<sup>1</sup> Roster, Chartered SAB Members and Liaisons

<sup>2</sup> Roster, BOSC

<sup>3</sup> Draft SAB panel report entitled *ORD New Strategic Research Directions: A Joint Report of the Science Advisory Board (SAB) and ORD Board of Scientific Councilors (BOSC) (09/05/11)*.

<sup>4</sup> Federal Register Notice Announcing the Meeting

<sup>5</sup> Agenda